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Incidentally he refers to the pitcher of Sarracenia as "corresponding morphologically to a peltate leaf like that of Nelumbium," but with the hollowed out depression of the upper surface much deepened and narrowed.——Morren's *Correspondance Botanique*, 8th edition, is a valuable aid to the botanical collector as well as the general botanist, giving as it does the address, title and special line of work of the more prominent botanists and collectors in all parts of the world.——We shall be doing a good service to many students by calling attention to the catalogue of works on natural history, just issued by Bernard Quaritch, 15 Piccadilly, London. Many rare and valuable botanical books are offered at moderate prices.——An important work, "Eléments de Botanique Fossile," by Edouard Bureau, is announced by the Paris booksellers as about ready.——Peter Henderson, well known for many years as a prominent horticulturist, has just published a "Handbook of Plants," which is designed to serve as a dictionary, or reference-book for the plants in cultivation either for use or ornament. It is especially adapted to this country, and is thus more valuable for Americans than Paxton's, Loudon's or Lindley's works. The arrangement is alphabetical for easy reference, but the natural order is indicated in every case. Instructions as to the best modes of cultivation are given in many cases, in addition to short descriptions of the plants. Not only will this book prove valuable to the horticulturist, but in many cases the botanist will find it indispensable also.

ZOÖLOGY.

THE KING SNAKE (OPHIBOLUS SAYI) SUPS ON A FULL GROWN WATER MOCCASIN (ANCISTRODON PISCIVORUS).—"Be ye therefore wise as serpents."—Matt. x, 16.

The non-venom-secreting Ophibolus and the deadly Ancistrodon had kept a friendly companionship for several days in the same prison box. Well aware of each other's peculiar method of self-defence, there had been a policy truce instituted for the nonce. The former did not relish a hypodermic injection of poison from his surgeon neighbor, and the latter equally as much dreaded a fraternal embrace from his acrobatic companion. The one abhorred convulsions and tetanoid calisthenics as much as the other deprecated triturated ribs and macerated scales. The sky became suddenly changed, and such a change! &c., *vide* Byron. Without warning, the king snake instantly whipped a coil or two of its tail around the neck of his neighbor, just as the cracker of a whip doubles into a knot by the movement of the staff in the hands of a deft coachman. Before the moccasin could recover from the shock, its entire body was tightly pressed by the reduplicating folds of its agile enemy. From neck to tail and back again, its entire length was tied up so effectually that respiration became difficult, movement of the body was out of question excepting a vibrating tremor passing helplessly from nasal tip to tail tip, and a swift contracting of the assailant's convoluting folds assured the victim of broken ribs and speedy helplessness. The mouth of the moccasin was open, though the bifid tongue could not dart forth, the lower jaw hung livid, and the strength left in the upper maxillary was insufficient to allow the poison fangs to erect themselves. Suffocation and broken ribs were too much even for a deadly snake to withstand. These facts were closely noted by our acute Ophibolus who slowly uncoiled himself from the neck of the vanquished, and withdrawing his head a few inches so as to notice the features of his prey, he advanced for the banquet. The stunning blow being felt, the moccasin had closed his mouth and was apparently resigned to his fate. Fastening his upper teeth upon the occipitals, and distending his os quadratum, the king snake held the head of his victim in his mouth, the tail of the latter still wriggling uneasily. The coiling became tighter and tighter, a slight noise like the crackling of bones was heard, accompanied by a tremor which shook both alike, and the two, victor and vanquished, now twisted up in a labyrinthine knot, rolled over and over like a spent ball from a cannon.

Taking them from the box, I uncoiled and stretched them out on the floor where they appeared like a double tailed snake without a head. This gave relief to the moccasin who, although his head, as far as the atlas, was firmly held between the jaws of his antagonist, wriggled manfully with renewed strength obtained by a release from the constrictor's folds. The king snake was now at a disadvantage, as noted from the movements of his tail. A stick was placed near it, around which it was instantly coiled to the *extent* of six inches, and with this purchase power he felt at ease. The ribs of the moccasin were effectually crushed, and the process of swallowing him was now easier and more rapid. About sixteen inches of the victim's body being stored away in the expanding stomach of the happy constrictor, a quantity of chloroform was administered to the gourmand, and in this position the two specimens are now preserved in my cabinet.

The length of the king snake was forty-two inches, and that of the moccasin thirty-four inches, the body of the latter being much larger than that of the former. The time occupied in this half-way repast, was two hours.

Only a scientific consideration prompted me to destroy and dissect my useful cannibal, for he had already eaten seven other snakes while in captivity.

This note must be added. Ophiophagi, or snake eating snakes, prefer other victims, and prey on their own species only on account of the absence of their regular food.—*John T. Humphreys, Burke Co., N. C.*

SURVIVAL OF WILD HABITS IN DOMESTICATED CATTLE.—One would suppose that Jersey cattle, which are probably the oldest domesticated breed, and which are noted for being such docile and gentle pets, had outgrown all traces of their wild habits; but I have frequently noticed some traits in my herd, which seem to me to be a survival of their wild habits away back in far distant times. For instance, in going to or returning from the pasture, the strongest cow or bull heads the procession, and the weakest or youngest calves bring up the rear. This order of movement is seldom varied, and it would seem to have been necessary for the protection of the weaker members of the herd in a wild state. Then, it often happens that those in the rear, as they are being driven to pasture, are lazy in their movements, and it is sometimes difficult to urge them along. But turn out and leave one or more such animals behind! They quickly find the use of their legs, and very soon gallop up to the herd, the protection of which they no doubt think they need. Choice grass and a good appetite are alike unavailing to keep them back when the herd is moving away! Again, they sometimes all take a notion to walk very slowly and linger by the way, even when much urged to go forward. At such times let a man come up behind them on a run, making a clattering noise with his feet, and without other effort the herd will prick up their ears and break into a trot. When moping over the ground, such a noise behind them will arouse them to life and movement at once. Horses act very much in the same manner when they suddenly hear the clattering of feet along the ground. It has seemed to me that in their wild state they must have learned that this noise indicated the near approach of danger, either from the apprehension of enemies, or from fright among their own associates, and that the habit has survived the necessities which called it into existence. Such peculiarities, though not specially important or noteworthy in themselves, would be more marked and decided in a wild state, and what we see now is but a faint trace of the alert habits of their old time predecessors.—*Chas. Aldrch, Webster City, Iowa, 1881.*

A DOG'S DISCRIMINATION OF SOUNDS.—My neighbor's dog, "Shep," used to stay at my place about as much as at home. He was of mixed blood—probably Newfoundland, shepherd and water spaniel—and very sagacious and tractable. A bridge crosses Boone river just below my residence, and below this bridge there are perhaps two hundred acres of timbered land, which is uninclosed and used for common pasturage. One of my cows wore a heavy deep-sounding bell, which could easily be heard a mile. Upon several occasions I sent "Shep" after the cows and he always brought them—and frequently after dark. My plan was to go and stand upon the high bridge and listen, keeping "Shep" close by my side. Upon catching the sound of our bell among a dozen others, as it came up rather indistinctly through the trees, I would say: "There, 'Shep,' that is our bell; go and get the cows!" As soon as he seemed to feel sure of the sound he would start off upon a run, and it would be but a few minutes until I would hear the bell coming towards home. From many trials I satisfied myself that he could distinguish the sound of our bell as far as I could myself. He could doubtless have been trained to do many such tasks, but he had had little or no training of any kind, and this instance that I have stated seemed to have been understood by him as a matter of course, and had not come through any special effort or discipline.—*Chas. Aldrich, Webster City, Iowa, 1881.*

DISCOVERIES IN THE ANATOMY OF CRUSTACEA.—Herr. Nebeski in his contributions to our knowledge of the Amphipoda of the Adriatic,[1] adds considerably to our knowledge of the anatomy and histology of these forms. He first discusses the glands in the legs of certain forms first pointed out by Prof. Smith.[2] Next the urinary glands, which are found at the posterior portion of the alimentary tract are investigated. Following this comes an account of the structure of the gills and the rectum of Orchestia. The next point discussed is the fact that certain portions of the testes of Orchestia produces eggs, and our author says: "we have here in general (überhaupt) no hermaphrodite gland, but the organ corresponds *in toto* to the testes of the allied Amphipoda, and shows only the remarkable exception *that a definite portion of the genital layer produces eggs.*" The article concludes with a review of the Amphipod fauna of Trieste.—*J. S. Kingsley.*

EFFECTS OF DIFFERENT COLORED LIGHT ON THE GROWTH OF ANIMALS.—Various persons have experimented upon the effects of different colored light upon the growth of animals, and have universally found that animals develop at different rates under the influence of the different colors. M. Yung in his recent investigations on the eggs of frogs, trout and Lymnæa,[3] found that they developed in the following order, the violet accelerating and the red retarding:

Violet.
Blue.
These two colors acted in nearly the same manner. { Yellow.
White.
Red.
Green.

—*J. S. K.*

ZOOLOGICAL NOTES.—The Proceedings of the United States National Museum, just issued, contain a check-list of duplicates of fishes from the Pacific Coast of North America, distributed by the Smithsonian Institution, in behalf of the National Museum, to different college museums. These collections are of great value, comprising many rare typical forms, and will do much towards the progress of ichthyology. Valuable notes on the fishes of the Pacific coast by Messrs. Jordan and Gilbert appear in the same periodical.——Among ornithological papers in the signature of the same Proceedings, issued April 13, 1881, is the description of a duck, *Fuligula rufina* (Pallas), which is new to the United States, having been found in the New York market, and supposed to have been shot on Long Island sound.——From his extended observations on the food of the fresh-water fishes of Illinois, Mr. S. A. Forbes is impressed with the "supreme importance of Entomostraca and the minute aquatic larvæ of Diptera as food for nearly or quite all of our fresh-water fishes, a conclusion that gives these trivial and neglected creatures, of whose very existence the majority of people are scarcely aware, a prominent place among the most valuable animals of the State, for without them all our waters would be virtually depopulated." He also brings out the interesting conclusion that a prolific species having an abundant food supply, and itself the most important food of predaceous fishes, may, by extraordinary multiplication, so diminish the food of the young of the latter as to cause, through its own abundance, a serious diminution of the numbers of the very species which prey upon it. It is not certain that the excessive increase of the gizzard shad would, by eventually reducing the supply of Entomostraca, cause a corresponding reduction in the numbers of all the species of that stream by starvation of the young; and this decimation, applying to all in the same ratio, would take effect upon the ordinary number of the other species, but upon the extraordinary number of the gizzard shad, would reduce the other species below the usual limit, but might not even cut off the excess of the shad above that limit. Consequently, important as is the supply of food-fishes for the predaceous species, it is not less important that the predaceous species should be supplied to eat up the food.——The third volume of Dr. G. S. Brady's Monograph of the Copepod Crustacea of the British Islands, published by the Ray Society, has appeared. This valuable and fully illustrated work will be welcomed by those in the United States interested in the Entomostraca.——The Transactions of the Kansas Academy of Science, for 1879-80, just issued, contain some important faunal entomological lists by Prof. F. H. Snow, of Kansas, Colorado and New Mexico; articles on the Batrachian reptiles of Kansas, by F. W. Cragin; and notes on the birds of Riley county, Kansas, by Dr. Blachly.

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[1] Otmar Nebeski, Beiträge zur Kenntniss der Amphipoden der Adria. Arbeiten aus dem Zool. Inst. Wien, III, pp. 1–52. pls. 4, 1880.

[2] Tube building Amphipoda. *Am. Jour. Sci.*, III, VII, p. 601, 1874.

[3] De l'influence des lumières colorèes sur le dèveloppement des animaux—Mittheilung Zool. Station Neapel, II, p. 233, 1880.